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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,146	01/25/2002	Victor C.W. Tsang	6395-62068	8734

24197 7590 04/15/2004

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EXAMINER	
DEVI, SARVAMANGALA J N	

ART UNIT	PAPER NUMBER
1645	

DATE MAILED: 04/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/048,146	TSANG ET AL.	
	Examiner	Art Unit	
	S. Devi, Ph.D.	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 17-28* is/are pending in the application.

4a) Of the above claim(s) *24-26 and 28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5, 17-23 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12502*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: Sequence alignment (2)

DETAILED ACTION

Preliminary Amendments

1) Acknowledgment is made of Applicants' preliminary amendments filed 01/25/02, 09/05/03, 07/25/02 and 04/18/02. With these, Applicants have amended the specification.

Election

2) Acknowledgment is made of Applicants' election filed 09/05/03 in response to the written lack of unity mailed 08/12/03. Applicants have elected invention II, claims 2, 3 and 5, drawn to TS-18 or antigenic fragments thereof, with traverse. Applicants' traversal is on the grounds that Ryan Greene *et al.* (*Mol. Biochem. Parasitol.* 99: 257-261, April 1999) is not available as prior art under 35 U.S.C § 102(b) or 102(a) because it was published less than one year prior to the priority date of 08/05/1999. Applicants state that Greene *et al.* is not the work of another since it describes the work of 3 of the 4 co-inventors. Applicants submit a Rule 1.132 Declaration stating that Hancock was not listed as on author on the publication because she was not involved in the protein purification aspect of the project. Applicants explain that Hancock is a co-inventor of the presently claimed subject matter because of her involvement in the recombinant cloning of the full-length sequences. Applicants submit that Greene et al. should not be used to assert a lack of unity of invention. Applicants urge that invention IV should not be separated from inventions I-III because SEQ ID NO: 7 is an antigenic subsequence of the TS-14, TS-18 and TSRS-1 polypeptides of *T. solium*.

Applicants' arguments have been carefully considered. Upon further consideration, claim 4, drawn to SEQ ID NO: 7, is now considered a linking claim along with claim 1 and has been rejoined along with claim 1. With regard to Applicants' argument that Greene *et al.* is not available as prior art for asserting lack of unity, it should be noted that other than Green *et al.* there are other references which well qualify as prior art under 35 U.S.C § 102(b). See the art rejections made below. The special technical feature still does not define over the prior art of record. As set forth previously, TS-14 and TSRS-1 are structurally non-identical with TS-18 and/or do not share significant structural elements with TS-18. Therefore, the lack of unity held via the Office Action mailed 08/12/03 is proper and is maintained.

Status of Claims

3) Claims 6-16 have been canceled via the amendment filed 09/05/03.

New claims 17-28 have been added via the amendment filed 09/05/03.

Claims 1-5 and 17-28 are pending.

Claims 2-5, to the extent these claims cover TS-18, have been elected.

Claims 24-26 and 28 have been withdrawn from consideration as not being directed to the elected invention. See 37 C.F.R 1.142(b) and M.P.E.P § 821.03.

Claims 1-5, and new claims 17-23 and 27 encompass the elected TS-18 product. Claim 7 is now considered as a linking claim to inventions I-III.

Claims 1-5, and new claims 17-23 and 27 are under examination. A first action on the merits is issued on these claims.

Sequence Listings

4) Acknowledgment is made of Applicants' submission of CRF and the raw Sequence Listings, which have been entered on 02/14/03.

Declaration under 37 CFR 1.132

5) Acknowledgment is made of the 132 Declaration filed 09/05/03, which has been carefully considered. The rest of the three inventors state that Hancock was not a co-author on the publication because Hancock was not involved in protein purification. However, it is noted that this Declaration is not signed by one of the four inventors of the instant application, Ryan M. Green.

Information Disclosure Statement

6) Acknowledgment is made of Applicants' Information Disclosure Statement filed 01/25/02. The information referred to therein has been considered and a signed copy is attached to this Office Action.

Priority

7) The instant application is a national stage 371 application of PCT/US00/21173 filed 08/03/2000 and claims priority to the provisional application 60/147,318 filed 08/05/1999.

Rejection(s) under 35 U.S.C. § 112, First Paragraph

8) Claim 23 is rejected under 35 U.S.C. § 112, first paragraph, because the specification while being enabling for a composition comprising one or more isolated, synthetic or recombinant larval polypeptides of *T. solium,* including the TS-18 polypeptide, comprising the amino acid sequence of SEQ ID NO: 4 or an antigenic fragment thereof, including SEQ ID NO: 7, that is immunoreactive with *T. solium* TS-18-specific antibodies, does not reasonably provide enablement for a composition comprising one or more isolated, synthetic or recombinant larval polypeptides of *T. solium,* including the TS-18 polypeptide, comprising the amino acid sequence of SEQ ID NO: 4 having one or more conservative substitutions, or an antigenic fragment thereof wherein the polypeptide is immunoreactive with *T. solium* antibodies, as claimed in a broad sense.

The instant claim is evaluated based on the *Wands* analysis. Many of the factors regarding undue experimentation have been summarized in *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Circ. 1988) as follows:

- The quantity of experimentation necessary (time and expense);
- The amount of direction or guidance presented;

- The state of the art;
- The relative skill of those in the art;
- The predictability or unpredictability of the art; and
- The breadth of the claims.

The instant claim is drawn to a composition comprising a TS-18 polypeptide variant comprising SEQ ID NO: 4 having one or more conservative substitutions, or antigenic fragments thereof, which variant is immunoreactive with *T. solium* antibodies. However, the instant specification lacks evidence showing the production of a single polypeptide variant of SEQ ID NO: 4 which concurrently has the ability to be immunoreactive with *T. solium* antibodies. Although the relative skill of those in this art is high, the breadth of the claims is unfoundedly broad and encompasses a significant number of TS-18 polypeptide variant species whose ability to have the function or property recited, i.e., immunoreactivity with *T. solium* antibodies, cannot be predicted following one or more conservative amino acid modification(s) or substitution(s). It is important to note that the purpose of the invention is to use the claimed polypeptide variant as an active diagnostic reagent or an immunogenic component. The prophylactic, therapeutic or diagnostic application minimally requires a specific interaction of the claimed polypeptide variant with *T. solium* antibodies. There is neither any evidence nor is it predictable that the claimed polypeptide having the amino acid sequence of SEQ ID NO: 4 and containing one or more conservative amino acid substitutions would have the same biological or functional characteristics as that of the native or unmodified polypeptide of SEQ ID NO: 4. This is critical because the state of the art reflects functional unpredictability with regard to conservative amino acid replacements. For instance, Lazar *et al.* (*Mol. Cellular Biol.* 8: 1247-1252, 1988) demonstrated that a substitution of Leu with a conservative amino acid residue, such as, Ile or His in the transforming growth factor (TGF) alpha led to a mutant protein with dramatically altered biological activities. Lazar *et al.* stated that they "did not expect that a mutation of Leu to Ile (which have similar sizes and polarities) would cause such a strong effect". See paragraph bridging left and right columns on page 1251; and third full paragraph on page 1251. Lazar *et al.* also taught that in transforming growth factor alpha, replacement of aspartic acid at position 47 with a conservative amino acid, glutamic acid, sharply reduced the biological activity of the mitogen. Clearly, the instant specification lacks evidence showing that an isolated polypeptide having the amino acid sequence of SEQ ID NO: 4 and any number of conservative amino acid replacements, if obtained, would retain the functional and biologic integrity of the native polypeptide of SEQ ID NO: 4, including the immunoreactivity with *T. solium* antibodies, and can be used for the same purpose. For these reasons, making and using of the instantly claimed polypeptide variant(s), which has the desired function(s) is well outside the realm of routine experimentation. Due to the lack of adequate disclosure, the lack of specific guidance, the lack of working examples enabling the full scope, the

art-demonstrated unpredictability, the breadth of the claim, and the quantity of experimentation necessary, one of ordinary skill in the art would not be able to make and use the polypeptide as recited in the instant claim without undue experimentation. Instant claim is viewed as not meeting the scope of enablement provisions of 35 U.S.C § 112, first paragraph.

Rejection(s) under 35 U.S.C. § 112, Second Paragraph

9) The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude one or more claims particularly pointing out and distinctly claiming the subject matter which the Applicant regards as his/her invention.

10) Claims 2-5, 21, 23 and 27 are rejected under 35 U.S.C § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which Applicants regard as the invention.

(a) Claims 2-4 and 27 are grammatically incorrect in the recitation 'polypeptides .. comprises'.

(b) Claim 5 is vague and indefinite in reciting 'nucleic acid molecules comprising SEQ ID NO: ..' without particularly pointing out that the SEQ ID number represents the nucleotide sequence. It is suggested that Applicants replace the recitation with --nucleic acid molecules comprising the nucleotide sequence of SEQ ID NO: ....--.

(c) Claim 21 is vague and indefinite in the recitation 'derivatives', because it is unclear what is encompassed in this limitation. What constitutes a 'derivative' and how much of the carrier molecule's original structure has to be retained such that the resulting product can be considered a 'derivative' is not clear. The metes and bounds of the structure encompassed in the limitation 'derivatives' are indeterminate.

(d) Claim 23 lacks proper antecedent basis for the limitation: 'SEQ ID NOS: ...'. Claim 23 depends from claim 3, which already recites the SEQ ID numbers. For proper antecedence, it is suggested that Applicants replace the limitation with --the SEQ ID NO: ....'--.

(e) Claim 23 is grammatically incorrect in the recitation 'SEQ ID NOS: 2, 4 or 6 comprise'. It is suggested that Applicants replace the recitation with --SEQ ID NO: 2, 4 or 6 comprises'--.

Rejection(s) under 35 U.S.C. § 102

11) The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> **(a)** the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
> **(b)** the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> **(e)** the invention was described in-
> **(2)** a patent granted on an application for patent by another filed in the United States before the invention by the Applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

12) Claims 1 and 20-22 are rejected under 35 U.S.C. § 102(a) as being anticipated by Hubert *et al.* (*Clin. Diagn. Lab. Immunol.* 6: 479-482, July 1999 - Applicants' IDS).

Hubert *et al.* taught isolated recombinant or synthetic larval *Taenia solium* antigens that are more than 90% sensitive and specific in the serodiagnosis of cysticercosis which antigens are immunoreactive with sera from patients suffering from cysticercosis. The antigens plus a bovine serum albumin was used during ELISA (see abstract; and page 479; Materials and Methods; Figure 1; and Results and Discussion).

Claims 1 and 20-22 are anticipated by Hubert *et al.*

13) Claims 1, 2 and 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by Tsang *et al.* (US 5,354,660 – Applicants' IDS).

Tsang *et al.* disclosed an isolated *Taenia solium* larval antigen, GP18, having a molecular weight of 18 K Daltons, which is immunoreactive with *T. solium* antibodies (see abstract; and Figure 2A and B; and Figure 3). Tsang's isolated *Taenia solium* larval antigen, GP18, is viewed as the same as the instantly claimed TS-18, but identified by Applicants with the alternate designation of TS-18.

The term 'synthetic' or 'recombinant' in claim 1 represents a process limitation. When claims are drawn to a product-by-process, claims are not limited to the manipulations of the recited step(s), but only the structure implied by the steps. MPEP § 2113 states:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)* (citations omitted).

A product does not have to be made by the same process in order to be the same product, because a product is a product, no matter how it is claimed. Applicants have not shown that the alleged difference(s) in the process results in a product that is structurally different from the product of the prior art. In the instant case, Applicants have not shown that the underlying structure of the prior art polypeptide differs from that of the instantly claimed polypeptide.

Claims 1, 2 and 27 are anticipated by Tsang *et al.*

14) Claims 1-5 and 27 are rejected under 35 U.S.C. § 102(a) as being anticipated by Greene *et al.* (*Mol. Biochem. Parasitol.* 99: 257-261, 30 April 1999 - Applicants' IDS) (Greene *et al.*, 1999).

Greene *et al.* (1999) taught a composition comprising an larval *Taenia solium* polypeptide of 18 kDa that has 100% sequence identity with the instantly recited SEQ ID NO: 4 or an antigenic fragment thereof, IAQLAK (i.e., SEQ ID NO: 7) that are immunoreactive with anti-cysticercosis antibodies and their

diagnostic potential. The antigen was used in immunoblotting and probing with anti-*T. solium* antisera, i.e., as a diagnostic reagent. See the enclosed sequence alignment report; Tables 1 and 2; and pages 258-260.

The term 'synthetic' or 'recombinant' in claim 1 represents a process limitation. When claims are drawn to a product-by-process, claims are not limited to the manipulations of the recited step(s), but only the structure implied by the steps. MPEP § 2113 states:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)* (citations omitted).

A product does not have to be made by the same process in order to be the same product, because a product is a product, no matter how it is claimed. Applicants have not shown that the alleged difference(s) in the process results in a product that is structurally different from the product of the prior art. In the instant case, Applicants have not shown that the underlying structure of the prior art polypeptide differs from that of the instantly claimed polypeptide.

Claims 1-5 and 27 are anticipated by Greene *et al.*

15) Claims 1, 4, 5 and 17-21 are rejected under 35 U.S.C. § 102(e)(2) as being anticipated by Doucette-Stamm *et al.* (US 6,583,275, filed 07/02/1997) as evidenced by Greene *et al.* (*J. Parasitol.* 86: 1001-1007, 2000 – Applicants' IDS) (Greene *et al.*, 2000).

It is noted that the recitation 'derivatives thereof' in claim 21 encompasses a single peptide or a dipeptide of the carrier molecule recited in the claim.

Doucette-Stamm *et al.* disclosed an isolated polypeptide fragment having the amino acid sequence, IAQLAK, i.e., the instantly claimed SEQ ID NO.7, which is encoded by a nucleic acid sequence. See the enclosed sequence alignment report. The fragment or the peptide is preferably 10-16 or 10-20 amino acid in length and is recombinantly produced or chemically synthesized (see second and third full paragraphs in column 39). The polypeptide fragment is contained in pharmaceutically acceptable carrier or adjuvant (see second full paragraph in column 40) and may comprise a fluorescent, luminescent label or dyes (see lines 41-57 in column 43). The polypeptide fragment may be conjugated to a carrier using techniques well known in the art (see second full paragraph in column 42) or may comprise dipeptide derivatives (i.e., derivatives of albumin, hemocyanin or thyroglobulin) (see paragraph bridging columns 40 and 41). That the prior art polypeptide fragment IAQLAK forms an antigenic fragment of the claimed TS-18 polypeptide is inherent from the teachings of Doucette-Stamm *et al.* in light of what is known in the art. For instance, Greene *et al.* (2000) taught the presence of the IAQLAK sequence or subunit within the recombinant or synthetic TS-18.

See enclosed sequence alignment reports; and Figure 2; Materials and Methods; and Results of Greene *et al.* (2000). The prior art polypeptide fragment having 100% structural identity to the instantly claimed SEQ ID NO: 7 is expected to be immunoreactive with *T. solium* antibodies.

Claims 1, 4, 5 and 17-21 are anticipated by Doucette-Stamm *et al.* Greene *et al.* (2000) is **not** used as a secondary reference in combination with Doucette-Stamm *et al.*, but rather is used to show that every element of the claimed subject matter is disclosed by Doucette-Stamm *et al.* with the unrecited limitation(s) being inherent in view of what is known in the art as explained above. See *In re Samour* 197 USPQ 1 (CCPA 1978).

Rejection(s) under 35 U.S.C. § 103

16) The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person. having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

17) Claims 17 and 20-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubert *et al.* (*Clin. Diagn. Lab. Immunol.* 6: 479-482, July 1999 - Applicants' IDS), or Tsang *et al.* (US 5,354,660 – Applicants' IDS), or Greene *et al.* (*Mol. Biochem. Parasitol.* 99: 257-261, 30 April 1999 - Applicants' IDS) (Greene *et al.*, 1999) as applied to claim 1 above and further in view of Campbell AM (*In*: *Monoclonal Antibody Technology*. Elsevier Science Publishers, The Netherlands, Chapter 1, pages 1-32, 1984).

The teachings of Hubert *et al.* or Tsang *et al.* or Greene *et al.* are taught above, which do not disclose their composition further comprising an adjuvant or a carrier molecule, such as, BSA or KLH.

However, it was conventional and routine in the art to add an art-known adjuvant to an art-known polypeptide or peptide, or link or conjugate it to an art-known carrier molecule, such as, BSA or KLH, to induce an enhanced antibody production to the polypeptide or peptide.

Campbell taught that it is customary now for any group working on a macromolecule to make antibodies to it sometimes without a clear objective for their application. Campbell also taught that protein macromolecules can be studied in the field of research using these antibodies (see page 29, last paragraph).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to add an art-known adjuvant to, or link an art-known BSA or KLH carrier to, Hubert's or Tsang's or Greene's polypeptide or peptide to produce the instant invention with a reasonable expectation of success. One of ordinary skill in the art would have been motivated to produce the instant invention for the expected benefit of using Hubert's or Tsang's or Greene's polypeptide or peptide as an immunizing composition, since it is conventional in the art to add an art-known adjuvant or link an art-known carrier molecule to an art-known polypeptide or peptide to enhance antibody production to the polypeptide or peptide. One of skill in the art would have been motivated to generate high-titer antibodies or antisera to Hubert's or Tsang's or Greene's polypeptide or peptide for the expected benefit of using high-titer antibodies or antisera to Hubert's or Tsang's or Greene's polypeptide or peptide in order to further study the polypeptide or peptide for research purposes as taught by Campbell.

Claims 17 and 20-22 are *prima facie* obvious over the prior art of record.

18) Claims 18 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubert *et al.* (*Clin. Diagn. Lab. Immunol.* 6: 479-482, July 1999 - Applicants' IDS), or Tsang *et al.* (US 5,354,660 – Applicants' IDS), or Greene *et al.* (*Mol. Biochem. Parasitol.* 99: 257-261, 30 April 1999 - Applicants' IDS) (Greene *et al.*, 1999) as applied to claim 1 above.

The teachings of Hubert *et al.* or Tsang *et al.* or Greene *et al.* are taught above, which do not disclose their composition further comprising an adjuvant or a carrier molecule, such as, BSA or KLH.

However, it was conventional and routine in the art to attach a chromogen or fluorogen label to an art-known polypeptide or peptide antigen known to have a diagnostic potential.

Given the diagnostic potential of Hubert's, Tsang's or Greene's peptide or polypeptide, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to attach a chromogen or fluorogen label to Hubert's, Tsang's or Greene's peptide or polypeptide to produce the instant invention, with a reasonable expectation of success. One of skill in the art would have been motivated to label Hubert's or Tsang's or Greene's polypeptide or peptide for the expected benefit of producing a diagnostic reagent for the diagnosis of cysticercosis, or for commercializing Hubert's or Tsang's or Greene's polypeptide or peptide for diagnostic purposes.

Claims 18 and 19 are *prima facie* obvious over the prior art of record.

Remarks

19) Claims 1-5, 17-23 and 27 stand rejected.

20) Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. Papers should be transmitted via the PTO Fax Center, which receives papers 24 hours a day and seven days a week. The transmission of such papers by facsimile must conform with the notice published in the Official Gazette, 1096 OG 30, November 15, 1989. The RightFax number for submission of before-final amendments is (703) 872-9306. The RightFax number for submission of after-final amendments is (703) 872-9307.

21) Any inquiry concerning this communication or earlier communications from the Examiner should be directed to S. Devi, Ph.D., whose telephone number is (571) 272-0854. The Examiner can normally be reached on Monday to Friday from 7.45 a.m. to 4.15 p.m. except one day each bi-week, which would be disclosed on the Examiner's voice mail system. A message may be left on the Examiner's voice mail system.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lynette Smith, can be reached on (571) 272-0864.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

April, 2004

S. DEVI, PH.D.
PRIMARY EXAMINER

SEQ ID NO. 7

```
DT   01-JAN-2004  (first entry)
XX
DE   E. faecium protein sequence SEQ ID 4439.
XX
KW   Vaccine; urinary tract infection; bacteraemia; endocarditis; wound;
KW   abdominal-pelvic infection.
XX
OS   Enterococcus faecium.
XX
PN   US6583275-B1.
XX
PD   24-JUN-2003.
XX
PF   30-JUN-1998;   98US-00107532.
XX
PR   02-JUL-1997;   97US-0051571P.
PR   14-MAY-1998;   98US-0085598P.
XX
PA   (GENO-) GENOME THERAPEUTICS CORP.
XX
PI   Doucette-Stamm LA,  Bush D;
XX
DR   WPI; 2003-799836/75.
DR   N-PSDB; ADC91158.
XX
PT   New isolated nucleic acid derived from Enterococcus faecium encoding an
PT   Enterococcus faecium polypeptide useful for detection, prevention and
PT   treatment of a pathological condition resulting from a bacterial
PT   infection.
XX
PS   Example 1; SEQ ID NO 4439; 243pp; English.
XX
CC   The invention relates to an isolated nucleic acid derived from
CC   Enterococcus faecium encoding an Enterococcus faecium polypeptide having
CC   one of 10 fully defined sequences given in the (or comprising 40
CC   sequential nucleotides chosen from any of the nucleic acids, its
CC   complement or sequences hybridising to it). Also included are a
CC   recombinant vector comprising the nucleic acid operably linked to
CC   transcription regulatory element, a cell comprising the vector and a
CC   single-stranded probe comprising the nucleic acid. The nucleic acids are
CC   chosen from 3654 disclosed sequences encoding 3654 disclosed proteins.
CC   The nucleic acids is useful for diagnosing pathological conditions
CC   resulting from E. faecium bacterial infection (e.g. urinary tract
CC   infection, bacteraemia, endocarditis, wounds and abdominal-pelvic
CC   infection) and for screening drugs such as agonists and antagonists. The
CC   nucleic acid is useful for recombinant production of Candida albicans -
CC   derived peptides or antisense polypeptides. Pharmaceutical compositions
CC   and vaccines containing the nucleic acid are useful for preventing or
CC   treating Enterococcus faecium infections. The present sequence represents
CC   one if the disclosed E. faecium proteins.
XX
SQ   Sequence 311 AA;

  Query Match             100.0%;  Score 6;  DB 7;  Length 311;
  Best Local Similarity   100.0%;  Pred. No. 38;
  Matches    6;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 IAQLAK 6
              ||||||
Db         50 IAQLAK 55
```

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RESULT 2
Q8T7K8
ID   Q8T7K8       PRELIMINARY;      PRT;    67 AA.
AC   Q8T7K8;
DT   01-JUN-2002 (TrEMBLrel. 21, Created)
DT   01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   8 kDa diagnostic antigen Ts14 variant 1 (Fragment).
OS   Taenia solium (Pork tapeworm).
OC   Eukaryota; Metazoa; Platyhelminthes; Cestoda; Eucestoda;
OC   Cyclophyllidea; Taeniidae; Taenia.
OX   NCBI_TaxID=6204;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=21011403; PubMed=11128471;
RA   Greene R.M., Hancock K., Wilkins P.P., Tsang V.C.;
RT   "Taenia solium: molecular cloning and serologic evaluation of 14- and
RT   18-kDa related, diagnostic antigens.";
RL   J. Parasitol. 86:1001-1007(2000).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Hancock K., Khan A., Rajshekar V., Tsang V.C.W.;
RL   Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF356337; AAM00206.1; -.
DR   InterPro; IPR008860; Taeniidae_ag.
DR   Pfam; PF05596; Taeniidae_ag; 1.
FT   NON_TER       1      1
FT   NON_TER      67     67
SQ   SEQUENCE   67 AA;  7620 MW;  01AF581940A40718 CRC64;

  Query Match             100.0%;  Score 26;  DB 5;  Length 67;
  Best Local Similarity   100.0%;  Pred. No. 84;
  Matches    6;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 IAQLAK 6
              ||||||
Db         43 IAQLAK 48
```

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KW   Signal.
FT   NON_TER       1      1
FT   SIGNAL       <1      7       POTENTIAL.
FT   CHAIN         8     74       18 KDA GLYCOPROTEIN TS18.
SQ   SEQUENCE   83 AA;  9473 MW;  DB45008DD2937335 CRC64;

  Query Match             100.0%;  Score 74;  DB 5;  Length 83;
  Best Local Similarity   100.0%;  Pred. No. 8.1e-70;
  Matches   74;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 FVVAVSAEKNKPKCDANSTKKEIEYIHNWFFHDDPIGKQIAQLAKDWNETVQEAKGKFWA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         10 FVVAVSAEKNKPKCDANSTKKEIEYIHNWFFHDDPIGKQIAQLAKDWNETVQEAKGKFWA 69

Qy         61 SLAEYCRGLKNKTA 74
              ||||||||||||||
Db         70 SLAEYCRGLKNKTA 83
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SEQ ID NO. 4

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RESULT 1
Q9U579
ID   Q9U579      PRELIMINARY;      PRT;    83 AA.
AC   Q9U579;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   18 kDa glycoprotein TS18 precursor (Fragment).
OS   Taenia solium (Pork tapeworm).
OC   Eukaryota; Metazoa; Platyhelminthes; Cestoda; Eucestoda;
OC   Cyclophyllidea; Taeniidae; Taenia.
OX   NCBI_TaxID=6204;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=99270314; PubMed=10340489;
RA   Greene R.M., Wilkins P.P., Tsang V.C.;
RT   "Diagnostic glycoproteins of Taenia solium cysts share homologous 14-
RT   and 18-kDa subunits.";
RL   Mol. Biochem. Parasitol. 99:257-261(1999).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=21011403; PubMed=11128471;
RA   Greene R.M., Hancock K., Wilkins P.P., Tsang V.C.;
RT   "Taenia solium: molecular cloning and serologic evaluation of 14- and
RT   18-kDa related, diagnostic antigens.";
RL   J. Parasitol. 86:1001-1007(2000).
RN   [3]
RP   SEQUENCE FROM N.A.
RA   Greene R.M., Hancock K., Williams F., Yushak M., Tsang V.C.W.;
RL   Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF082828; AAD51763.2; -.
DR   InterPro; IPR008860; Taeniidae_ag.
DR   Pfam; PF05596; Taeniidae_ag; 1.
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